

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Canceled) A multi-component gas analyzing method using FTIR, comprising:

a quantitatively analyzing a plurality of components in a sample based upon an absorption spectrum obtained by FTIR;

calculating multi-component concentrations from a mixed gas spectrum by using a quantitative algorithm; and

after calculating the multi-component concentrations, correcting for an influence due to a difference in a base gas composition between an exhaust gas and a calibration gas error in the calculated multi-component concentrations caused by a change in an intensity spectrum obtained by FTIR due to a presence of a coexistent gas in the sample.

2. (Canceled) The method of claim 21, further comprising:

measuring the coexistent gas component using FTIR; and

directly applying resulting data from the correcting calculations.

3. (Canceled) The method of claim 21, further comprising:

measuring the coexistent gas component using a method other than FTIR; and

using an external analyzer to read resulting data from the correcting calculations, wherein time matching is performed by a CPU of the FTIR.

4. (Canceled) The method of claim 1, wherein the correcting step corrects influences due to a difference in a base gas composition between an exhaust gas and a

calibration gas.

5. (Canceled) The method of claim 21, wherein the correcting step corrects influences of coexistent H₂O with respect to CO, CO₂, NO, and N₂O.
6. (Canceled) The method of claim 5, wherein the influence is approximated by a linear equation for a fixed H₂O concentration.
7. (Canceled) The method of claim 5, wherein the influence is approximated by a quadratic equation for a fixed H₂O concentration.
8. (Canceled) The method of claim 21, wherein the correcting step corrects influences of coexistent H₂O with respect to CO.
9. (Canceled) The method of claim 8, wherein the influence is approximated by a linear equation for a fixed H₂O concentration.
10. (Canceled) The method of claim 8, wherein the influence is approximated by a quadratic equation for a fixed H₂O concentration.
11. (Canceled) The method of claim 21, wherein the correcting step corrects influences of coexistent H₂O with respect to CO₂.
12. (Canceled) The method of claim 11, wherein the influence is approximated by a linear equation for a fixed H₂O concentration.
13. (Canceled) The method of claim 11, wherein the influence is approximated by a quadratic equation for a fixed H₂O concentration.
14. (Canceled) The method of claim 21, wherein the correcting step corrects influences of coexistent H₂O with respect to NO.
15. (Canceled) The method of claim 14, wherein the influence is approximated by a

linear equation for a fixed H₂O concentration.

16. (Canceled) The method of claim 14, wherein the influence is approximated by a quadratic equation for a fixed H₂O concentration.

17. (Canceled) The method of claim 21, wherein the correcting step corrects influences of coexistent H₂O with respect to N₂O.

18. (Canceled) The method of claim 17, wherein the influence is approximated by a linear equation for a fixed H₂O concentration.

19. (Canceled) The method of claim 17, wherein the influence is approximated by a quadratic equation for a fixed H₂O concentration.

20. (Canceled) The method of claim 21, wherein the correcting step corrects influence caused by a difference in water concentration between exhaust gases and a calibration gas and a change in H₂O concentration in a sample gas being measured.

21. (Currently Amended) A multi-component gas analyzing method using FTIR, comprising;

quantitatively analyzing a plurality of components in a sample based upon an absorption spectrum obtained by FTIR;

calculating multi-component concentrations from a mixed gas spectrum by using a quantitative algorithm; and

~~after calculating the multi-component concentrations, correcting for an influence due to a difference in a base gas composition between and exhaust gas and a calibration gas~~
error in the calculated multi-component concentrations caused by a change in an intensity spectrum obtained by FTIR due to a presence of a coexistent gas in the sample.

22. (New) The method of claim 21, further comprising:

measuring the coexistent gas component using FTIR; and

directly applying resulting data from the correcting calculations.

23. (New) The method of claim 21, further comprising:

measuring the coexistent gas component using a method other than FTIR; and

using an external analyzer to read resulting data from the correcting calculations,
wherein time matching is performed by a CPU of the FTIR.

24. (New) The method of claim 21, wherein the correcting step corrects influences of
coexistent H₂O with respect to CO, CO₂, NO, and N₂O.

25. (New) The method of claim 24, wherein the influence is approximated by a linear
equation for a fixed H₂O concentration.

26. (New) The method of claim 24, wherein the influence is approximated by a
quadratic equation for a fixed H₂O concentration.

27. (New) The method of claim 21, wherein the correcting step corrects influences of
coexistent H₂O with respect to CO.

28. (New) The method of claim 27, wherein the influence is approximated by a linear
equation for a fixed H₂O concentration.

29. (New) The method of claim 27, wherein the influence is approximated by a
quadratic equation for a fixed H₂O concentration.

30. (New) The method of claim 21, wherein the correcting step corrects influences of
coexistent H₂O with respect to CO₂.

31. (New) The method of claim 30, wherein the influence is approximated by a linear equation for a fixed H₂O concentration.

32. (New) The method of claim 30, wherein the influence is approximated by a quadratic equation for a fixed H₂O concentration.

33. (New) The method of claim 21, wherein the correcting step corrects influences of coexistent H₂O with respect to NO.

34. (New) The method of claim 33, wherein the influence is approximated by a linear equation for a fixed H₂O concentration.

35. (New) The method of claim 33, wherein the influence is approximated by a quadratic equation for a fixed H₂O concentration.

36. (New) The method of claim 21, wherein the correcting step corrects influences of coexistent H₂O with respect to N₂O.

37. (New) The method of claim 36, wherein the influence is approximated by a linear equation for a fixed H₂O concentration.

38. (New) The method of claim 36, wherein the influence is approximated by a quadratic equation for a fixed H₂O concentration.

39. (New) The method of claim 21, wherein the correcting step corrects influence caused by a difference in water concentration between exhaust gases and a calibration gas and a change in H₂O concentration in a sample gas being measured.